

A Brief note on Capsules and its Types

Dai Ron*

Department of Analytical Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece

DESCRIPTION

Capsules are solid dosage forms in which the pharmacological component is encased in a hard or soft dissolving shell, most commonly made of gelatin. Capsule comes from the Latin word "capsula", which means "little container." The medication could be in the form of a powder, liquid or semisolid material.

Encapsulation is a term used in the pharmaceutical industry to describe a variety of dosage forms techniques for enclosing medicines in a somewhat stable shell known as a capsule, allowing them to be taken orally or used as suppositories.

Hard-shelled capsules

Hard-shelled capsules containing dry, powdered materials or small pellets created by extrusion or spherization, for example, a smaller-diameter "body" is filled and then sealed with a larger-diameter "cap."

Soft-shelled capsules

Oils and active substances that are dissolved or suspended in oil are generally included in soft-shelled capsules.

Both types of capsules are manufactured from aqueous solutions of gelling substances such as animal protein or plant polysaccharides or derivatives. Plasticizers such as glycerine or sorbitol, which reduce the capsule's hardness, coloring agents, preservatives, disintegrates, lubricants, and surface coating can all be added to the gelling agent solution. Consumers have regarded capsules as the most effective form of taking medication since its beginnings. As a result, manufacturers of OTC analgesics created the "caplet," a portmanteau of "capsule-shaped tablet," to tie this good connotation to more efficiently-produced tablet pills, as well as having an easier-to-swallow shape than the traditional disk-shaped tablet medication.

Methods

Single-piece gel encapsulation: A patent was given to Mothes and Dublanc in 1833 for a method of producing a single-piece

gelatine capsule sealed with a drop of gelatine solution. Individual iron moulds were employed in their process, and each capsule was filled separately using a medicine dropper. Later, methods for forming capsules that utilized sets of plates with pockets were devised. Although some businesses still employ this technology, commercially available equipment is no longer available. R. P. Scherer devised a method in 1933 that is used in all modern soft-gel encapsulation.

The capsules were made with a rotary die in his invention. Blow moulding was used to fill them. This approach was high-yielding, repeatable, and waste-free. Soft gels can be an effective delivery strategy for oral medications, particularly those that are poorly soluble. This is because the fill can include liquid substances that aid in increasing the drug's solubility or permeability across bodily membranes. It's difficult to integrate liquid substances in any other solid dosage form, such as a pill. Soft gels are also well suited to strong medications, as the highly reproducible filling method ensures that each soft gel contains the same amount of drug, and the operators are not exposed to any drug dust during the manufacturing process.

Two-piece gel encapsulation: In 1847, Londoner James Murdoch developed the two-piece telescopic gelatine capsule. By dipping metal pins in the gelling agent solution, the capsules are formed in two pieces. The capsules are sent to the pharmaceutical company in sealed packages. Before use, the two halves of the capsule are separated, the capsule is filled with powder or, more commonly, pellets made by the extrusion and spherization process, and the other half is pressed on.

Weight changes less between capsules when using the compressed slug method. The machinery necessary to make them, on the other hand, is a more complicated procedure. The active substances are contained in the powder or spheroids inside the capsule, along with any excipients such as binders, disintegrates, fillers, glidants, and preservatives.

Correspondence to: Dai Ron, Department of Analytical Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece,

E-mail: rondai107@gmail.com

Received: December 2, 2021; **Accepted:** December 17, 2021; **Published:** December 24, 2021

Citation: Ron D (2021) A Brief note on Capsules and its types. Pharm Anal Acta. 12: 664.

Copyright: © 2021 Ron D. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.
